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TABLE I.

Date.	θ_o	θ_c	ρ_o	ρ_c	$\Delta\theta$(o–c)	$\Delta\rho$(o–c)	Observer.	n
1888.28	142°.0	145°.7	0″.21	0″.23	− 3°.7	− 0″.02	SCHIAPARELLI	6
1888.98	154 .4	153 .0	0 .26	0 .24	+ 1 .4	+ 0 .02	BURNHAM	2
1890.92	170 .0	170 .8	0 .19	0 .24	− 0 .8	− 0 .05	BURNHAM	2
1892.18	179 .6	182 .3	0 .21	0 .24	− 2 .7	− 0 .03	BURNHAM	2
1896.21	212 .0	223 .3	0 .22	0 .22	− 11 .3	± 0 .00	LEWIS........	3
1898.14	250 .7	246 .5	0 .18	0 .20	+ 4 .2	− 0 .02	AITKEN	1
1899.15	261 .3	261 .3	0 .22	0 .18	± 0 .0	+ 0 .04	AITKEN	3
1899.23	263 .5	262 .6	0 .21	0 .18	+ 0 .9	+ 0 .03	LEWIS........	4
1899.92	274 .8	276 .2	0 .18	0 .15	− 1 .4	+ 0 .03	AITKEN	1
1900.18	293 .4	283 .1	0 .13	0 .13	+ 10 .3	± 0. 00	AITKEN	3
1900.24	267 .2	284 .9	0 .20	0 .13	− 17 .7	+ 0 .07	LEWIS........	1
1903 06	132 .1	129 .9	0 .19	0 .20	+ 2 .2	− 0 .01	AITKEN	3

March 14, 1903.

R. G. AITKEN.

THE PRESSURE OF LIGHT AND HEAT AND THE EXPERIMENTAL PRODUCTION OF AN APPEARANCE RESEMBLING THE TAIL OF A COMET.

At the recent meeting of the American Physical Society in Washington, a paper* was presented by Professor E. F. NICHOLS and G. F. HULL giving the final results of their experiments upon the pressure of heat and light. With the improvements in the apparatus suggested by their early trials, very accurate results have been obtained. The observed pressures agreed *within one per cent* of those computed from theory.

The effect of wave-lengths on the pressure was tested. The pressure was found to be independent of the wave-length and to depend only upon the energy of the radiations. This is in accordance with the theory.

A very interesting application of this pressure effect was made by the investigators in the production of an appearance resembling a comet's tail. A powder consisting of a mixture of emery and puff-ball spores was placed in a vacuum-tube somewhat resembling an hour-glass. The exhaustion of the tube was made as perfect as possible, and especial care was taken to get rid of any mercury vapor. When the powder was poured from one portion of the tube to the other and an arc-light directed upon it at the same time, the lighter portions of the powder were repelled, producing an appearance closely resembling the tail of a comet. The effect was comparable with what was to be expected from the energy observed. The authors considered it possible that the phenomena might be produced in part by other causes. In any event, the experiment reproduced with great accuracy the appearances observed in the tails of comets.

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* "Pressure Due to Radiation." In the account of the meeting in *Science* of January 30, 1903.

This work of NICHOLS and HULL points the way to other investigations which should throw much light on the vexed question of the constitution of the comets. C. D. P.

NOTES ON THE THREE COMETS NOW VISIBLE.

Comet a 1903: The telegram announcing the discovery of a new comet by M. GIACOBINI at Nice was received at the Lick Observatory on January 20th, but continuous stormy weather prevented observations here until the evening of January 29th. As seen with the 12-inch telescope on that date, the comet appeared to be about as bright as a ninth-magnitude star. It was small, nearly round, and with only a feeble condensation. During the month of February the comet grew steadily brighter and larger, and the condensation in the coma became more sharply defined, appearing at the time of the last obsrvation as a bright disk about 2″ or 3″ in diameter. On February 15th, a faint straight tail was visible to a distance of about 5′ in the north-following quadrant. This has grown brighter and longer, being traced to a distance of more than one degree in position-angle 47° on February 25th. When last seen the comet as a whole was as bright as a 6.5-magnitude star.

Comet d 1902: Observations secured here during February show that this comet is following very closely the orbit given in No. 88 of these *Publications* (p. 27). The residuals at the date of my last observations (February 28th) were only $-0^{s}.6$ and $+9''$. The comet's appearance has changed very little, though it is perhaps fainter than at first. It is still measurable with the 12-inch telescope, and can probably be followed with large telescopes for a month or two more. With one exception its perihelion distance is greater than that of any other comet so far found.